

WHAT IS CLAIMED IS:

1 1. A method for interrupt processing, comprising:
2 determining that an event has occurred;
3 determining a state of an event data structure; and
4 writing an event entry into the event data structure in response to determining that
5 the event has occurred.

1 2. The method of claim 1, further comprising:
2 issuing an interrupt in response to determining that the state of the event data
3 structure is armed and that a condition exists to cause an interrupt.

1 3. The method of claim 1, further comprising:
2 shutting down in response to determining that the state of the event data structure
3 is undefined.

1 4. The method of claim 1, further comprising:
2 checking a structure state indicator to determine the state of the event data
3 structure.

1 5. The method of claim 1, further comprising:
2 advancing a write indicator in the event data structure;
3 checking for an overflow condition; and
4 processing the overflow condition in response to determining that an overflow
5 condition exists.

1 6. A method for interrupt processing, comprising:
2 determining that an interrupt has occurred;
3 reading an event entry in an event data structure in response to determining that
4 the interrupt has occurred; and
5 updating a state of a structure state indicator.

1 7. The method of claim 6, further comprising:
2 updating the state in the structure state indicator to unarmed in response to
3 determining that the interrupt has occurred.

1 8. The method of claim 6, further comprising:
2 determining whether to allow interrupts;
3 updating the state in a structure state indicator to armed in response to
4 determining that interrupts are to be allowed; and
5 waiting for an interrupt.

1 9. The method of claim 6, further comprising:
2 determining whether a reset has occurred; and
3 updating the state in the structure state indicator to undefined in response to
4 determining that the reset has occurred.

1 10. The method of claim 6, further comprising:
2 initializing the event data structure;
3 notifying an I/O device of the location of the event data structure; and
4 updating the state of the structure state indicator to unarmed.

1 11. The method of claim 6, further comprising:
2 determining whether an event code for the event entry that was read is clear; and
3 processing the event in response to determining that the event code is not clear.
4

5 12. The method of claim 11, further comprising:
6 clearing an event code for the event entry; and
7 advancing a read indicator for the event data structure.

1 13. The method of claim 6, further comprising:

2 generating multiple event data structures for one I/O device, wherein events for
3 different I/O device functions are associated with one of the multiple event data
4 structures; and
5 dynamically mapping each of the multiple event data structures to a processor.

1 14. A system for in interrupt processing, comprising:
2 an Input/Output device coupled to a bus; and
3 circuitry at the Input/Output device operable to:
4 determine that an event has occurred;
5 determine a state of an event data structure; and
6 write an event entry into the event data structure in response to
7 determining that the event has occurred.

1 15. The system of claim 14, wherein the circuitry is operable to:
2 issue an interrupt in response to determining that the state of the event data
3 structure is armed and that a condition exists to cause an interrupt.

1 16. The system of claim 14, wherein the circuitry is operable to:
2 shut down in response to determining that the state of the event data structure is
3 undefined.

1 17. The system of claim 14, wherein the circuitry is operable to:
2 check a structure state indicator to determine the state of the event data structure.

1 18. The system of claim 14, wherein the circuitry is operable to:
2 advance a write indicator in the event data structure;
3 check for an overflow condition; and
4 process the overflow condition in response to determining that an overflow
5 condition exists.

1 19. A system for in interrupt processing, comprising:

2 an Input/Output device driver coupled to a bus; and
3 circuitry at the Input/Output device driver operable to:
4 determine that an interrupt has occurred;
5 read an event entry in an event data structure in response to determining
6 that the interrupt has occurred; and
7 update a state of a structure state indicator.

1 20 The system of claim 19, wherein the circuitry is operable to:
2 update the state in the structure state indicator to unarmed in response to
3 determining that the interrupt has occurred.

1 21. The system of claim 19, wherein the circuitry is operable to:
2 determine whether to allow interrupts;
3 update the state in a structure state indicator to armed in response to determining
4 that interrupts are to be allowed; and
5 wait for an interrupt.

1 22. The system of claim 19, wherein the circuitry is operable to:
2 determine whether a reset has occurred; and
3 update the state in the structure state indicator to undefined in response to
4 determining that the reset has occurred.

1 23. The system of claim 19, wherein the circuitry is operable to:
2 initialize the event data structure;
3 notify an I/O device of the location of the event data structure; and
4 update the state of the structure state indicator to unarmed.

1 24. The system of claim 19, wherein the circuitry is operable to:
2 determine whether an event code for the event entry that was read is clear; and
3 process the event in response to determining that the event code is not clear.
4

5 25. The system of claim 24, wherein the circuitry is operable to:
6 clear an event code for the event entry; and
7 advance a read indicator for the event data structure.

1 26. The system of claim 19, wherein the circuitry is operable to:
2 generate multiple event data structures for one I/O device, wherein events for
3 different I/O device functions are associated with one of the multiple event data
4 structures; and
5 dynamically map each of the multiple event data structures to a processor.

1 27. An article of manufacture for interrupt processing, wherein the article of
2 manufacture at an Input/Output device is operable to:
3 determine that an event has occurred;
4 determine a state of an event data structure; and
5 write an event entry into the event data structure in response to determining that
6 the event has occurred.

1 28. The article of manufacture of claim 27, wherein the article of manufacture
2 is operable to:
3 issue an interrupt in response to determining that the state of the event data
4 structure is armed and that a condition exists to cause an interrupt.

1 29. The article of manufacture of claim 27, wherein the article of manufacture
2 is operable to:
3 shut down in response to determining that the state of the event data structure is
4 undefined.

1 30. The article of manufacture of claim 27, wherein the article of manufacture
2 is operable to:
3 check a structure state indicator to determine the state of the event data structure.

1 31. The article of manufacture of claim 27, wherein the article of manufacture
2 is operable to:
3 advance a write indicator in the event data structure;
4 check for an overflow condition; and
5 process the overflow condition in response to determining that an overflow
6 condition exists.

1 32. An article of manufacture for interrupt processing, wherein the article of
2 manufacture at an Input/Output device driver is operable to:
3 determine that an interrupt has occurred;
4 read an event entry in an event data structure in response to determining that the
5 interrupt has occurred; and
6 update a state of a structure state indicator.

1 33. The article of manufacture of claim 32, wherein the article of manufacture
2 is operable to:
3 update the state in the structure state indicator to unarmed in response to
4 determining that the interrupt has occurred.

1 34. The article of manufacture of claim 32, wherein the article of manufacture
2 is operable to:
3 determine whether to allow interrupts;
4 update the state in a structure state indicator to armed in response to determining
5 that interrupts are to be allowed; and
6 wait for an interrupt.

1 35. The article of manufacture of claim 32, wherein the article of manufacture
2 is operable to:
3 determine whether a reset has occurred; and
4 update the state in the structure state indicator to undefined in response to
5 determining that the reset has occurred.

1 36. The article of manufacture of claim 32, wherein the article of manufacture
2 is operable to:
3 initialize the event data structure;
4 notify, an I/O device of the location of the event data structure; and
5 update the state of the structure state indicator to unarmed.

1 37. The article of manufacture of claim 32, wherein the article of manufacture
2 is operable to:
3 determine whether an event code for the event entry that was read is clear; and
4 process the event in response to determining that the event code is clear.
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6 38. The article of manufacture of claim 37, wherein the article of manufacture
7 is operable to:
8 clear an event code for the event entry; and
9 advance a read indicator for the event data structure.

1 39. The article of manufacture of claim 32, wherein the article of manufacture
2 is operable to:
3 generate multiple event data structures for one I/O device, wherein events for
4 different I/O device functions are associated with one of the multiple event data
5 structures; and
6 dynamically map each of the multiple event data structures to a processor.